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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,471	02/17/2004	Rishi Mohindra	PHA23.914A	1404

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EXAMINER	
AFSHAR, KAMRAN	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,471	MOHINDRA ET AL.	
	Examiner	Art Unit	
	Kamran Afshar, 571-272-7796	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 02/17/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-14 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,721,548. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both basically claim the same subject matter which includes: 1) A received signal strength indicator for use in radio device with an antenna for receiving a radio frequency signal / A radio device comprising: an antenna for receiving a radio frequency signal / A method of determining a received signal strength indicator signal from an in-phase signal component and a quadrature signal component of a low intermediate frequency signal that represents a received radio frequency signal, 2) determining a first absolute value from said in-phase signal component; 3) determining a second absolute value from said quadrature signal component; 4)

and summing said first and second absolute values, 5) A radio device comprising: an antenna for receiving a radio frequency signal.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Gabato (U.S. Patent 5,603,112).

With respect to claim 1, Gabato discloses a prior art (See Fig. 2) which teaches a method of determining a received signal strength indicator **(RSSI)** signal from an in-phase (**I**) signal component and a quadrature (**Q**) signal component **(See I, Q, 201, 203, 205 of Fig. 2)** that are (inherently) a low intermediate frequency **(IF)** signal that represents a received radio frequency signal, first determines an absolute value from in-phase (**I**) signal component **(See 201 of fig. 2)**; and second determines an absolute value from quadrature (**Q**) signal component **(See 203, of fig. 1)**; and summing the absolute values (See 205 of fig.1, Co. 1, Lines 23-38). Further, With respect to Fig. 3, Gabato discloses that the determined absolute value in-phase (**I**) signal component and determined an

absolute value of quadrature (**Q**) signal component compared and added / summed after to output absolute value of (RSSI) **(See Co. 2, Lines 45-59 & fig.3).**

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7-8 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Haartsen (U.S. Patent 6,081,697).

With respect to claim 7 & 13, Gabato discloses a prior art (See Fig. 2) which teaches a method of determining radio device / a received signal strength indicator **(RSSI)** signal from an in-phase (**I**) signal component and a quadrature (**Q**) signal component **(See I, Q, 201, 203, 205 of Fig. 2)** that are inherently formed low intermediate frequency **(IF)** signal that represents a received radio frequency signal, first determines an absolute value from in-phase (**I**) signal component **(See 201 of fig. 2)**; and second determines an absolute value from quadrature (**Q**) signal component **(See 203, of fig. 1)**; and summing the absolute values (See 205 of fig.1, Co. 1, Lines 23-38). Further, With respect to Fig. 3, Gabato discloses that the determined absolute value in-phase (**I**) signal component and determined an absolute value of quadrature (**Q**) signal component compared and added / summed after to output absolute value of **(RSSI) (See e.g. Co. 2, Lines 45-59 & fig.3).** However, Gabato did not explicitly teach the radio device comprising: an antenna for receiving a radio frequency signal; a quadrature down converter for producing a low intermediate frequency in-phase signal component and a low intermediate frequency quadrature signal component from radio frequency signal. In the same field of endeavor, Haartsen teaches a known conventional radio receiver architecture which shows an antenna (See 205 of Fig. 2) for receiving a radio frequency signal; a quadrature down converter for producing a low intermediate frequency in-phase signal component (See 270, 260, 230, 240, 250 of Fig. 2) and a low intermediate frequency quadrature signal component (See 270, 260,

280, 290, 295 of Fig. 2) from radio frequency signal (See Co. 5, Lines 4-35). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Haartsen to Gabato to provide a more compact single integrating circuit which as many as functions as possible to reduce the cost and reduce the power consumption and increase reliability as suggested by Haartsen (See Co. 1, Lines 21-30).

8. Claims 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112).

Regarding claims 2, 4, Gabato discloses everything as discussed above in claim 1. Further, Gabato makes its obvious that an additional ROM is required to calculate the square-root or logarithmically (10 log) processing (See Co. 1, Lines 41-42) and / or a function block which calculates f(x) = 20 log (x) to obtain values in dB (See Co. 2, Line58) . Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Gabato to provide a method and / or an apparatus for measuring the RSSI and logarithmically processing was accomplished by a function block f(x) = 20 log (x) to obtain values in dB in-phase (**I**) and quadrature (**Q**) signal components before determining / after summing first and second absolute values / magnitudes in a less complex calculation (See e.g. Gabato e.g. Co. 1, Line 65- Co. 2, Line 2) .

9. Claims 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Yoshizawa (U.S. Patent 6,311,049 B1).

Regarding claim 5, Gabato disclosed everything as discussed above in claim 1. However, Gabato did not teach received signal strength indicator signal is further determined by low pass filtering. In the same field of endeavor, Yoshizawa clearly teaches received signal strength indicator signal is further determined by low pass filtering (See 113-114 , RSSI output of Fig. 1). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Yoshizawa to Gabato provided summed signal is smoothed by a low-pass filter as suggested by Yoshizawa (See Co. 2, Lines 12-13).

Regarding claim 3, it is obvious that logarithmically processing comprises multistage limiting of the in-phase and quadrature signal components, and summing (See Gabato e.g. Co. 1, Lines 21-29, Figs. 1-5) the multistage limited in-phase and quadrature signal components (See Yoshizawa e.g. Co. 1, Line 65, Co. 3, Lines 53-58).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Chamber (U.S. Patent 5,901,347).

Regarding claim 6, Gabato disclosed everything as discussed above in claim 1. However, Gabato was silent the low intermediate frequency (IF) signal is a zero intermediate frequency (IF) signal. In the same field of endeavor, Chamber teaches the low intermediate frequency (IF) signal is a zero intermediate frequency (IF) signal (See e.g. Co. 1, Lines 14-27). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Chamber to Gabato to facilitate low-pass filters which reject unwanted signal

frequencies and can be integrated on-chip with other components of the receiver to reduce the

size and cost of the receiver and the radio as suggested by Chamber (See e.g. Co. 1, Lines 25-30).

11. Claims 9-10, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Haartsen (U.S. Patent 6,081,697) further in view of Yoshizawa (U.S. Patent 6,311,049 B1).

Regarding claims 10, 14, Gabato and Haartsen disclosed everything as discussed above in claim 7, 13. However, Gabato and Haartsen did not teach received signal strength indicator signal is further determined by low pass filtering. In the same field of endeavor, Yoshizawa clearly teaches received signal strength indicator signal is further determined by low pass filtering (See e.g.113-114, RSSI output of Fig. 1). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Yoshizawa to Gabato in view of Haartsen provided summed signal is smoothed by a low-pass filter as suggested by Yoshizawa (See e.g. Co. 2, Lines 12-13).

Regarding claim 9, it is obvious that the first and second logarithmic signal formers comprise respective multistage limiters (See Gabato e.g. Co. 1, Lines 21-29, Figs. 1-5) and respective adders for adding signals produced by said multistage limiters (See Yoshizawa e.g. Co. 1, Line 65, Co. 3, Lines 53-58) (See Yoshizawa e.g. Co. 1, Line 65, Co. 3, Lines 53-58).

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Haartsen (U.S. Patent 6,081,697) further in view of Chamber (U.S. Patent 5,901,347).

Regarding claim 11, Gabato and Haartsen disclosed everything as discussed above in claim 7, 13. However, Gabato and Haartsen were silent the low intermediate frequency (IF) signal is a zero intermediate frequency (IF) signal (See e.g. Co. 1, Lines 14-27). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Chamber to Gabato and Haartsen to facilitate low-pass filters which reject unwanted signal frequencies and can be integrated on-chip with other components of the receiver to reduce the size and cost of the receiver and the radio as suggested by Chamber (See e.g. Co. 1, Lines 25-30).

1. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gabato (U.S. Patent 5,603,112) in view of Haartsen (U.S. Patent 6,081,697) further in view of Yoshizawa (U.S. Patent 6,311,049 B1).

Regarding claim 12, Gabato and Haartsen disclosed everything as discussed above in claim 7. However, Gabato and Haartsen were silent the received signal strength indicator signal is further determined by low pass filtering. In the same field of endeavor, Yoshizawa clearly teaches received signal strength indicator signal is further determined by low pass filtering (See e.g. 113-114 , RSSI output of Fig. 1). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provided above teaching of Yoshizawa to Gabato and Haartsen provided summed signal is smoothed by a low-pass filter as suggested by Yoshizawa (See e.g. Co. 2, Lines 12-13).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Lunsford (U.S. 3,85,036).

b) Minins (U.S. Pub. No.: 2002/0058491 A1).

c) Gold (U.S. 5,488,631).

d) Harwood (U.S. 4,464,633).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, **Eng, George** can be reached @ (571) 272-3984. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kamran Afshar

GEORGE ENG
SUPERVISORY PATENT EXAMINER